1890MNRAS..50..398G

This correction reduces the preceding expressions to

From the Observations of 1847–58.	From the Observations of 1862–74.
$K_s = -1''{\cdot}71$	$K_s = -1''{\cdot}62$
$K_c = -0{\cdot}07$	$K_c = +0{\cdot}48$

Hence the real values of the *Jovian Evection* indicated by observation are somewhat greater than calculated by Professor Newcomb as the value of his empirical term.

The preceding investigation shows clearly that the observations indicate a value for the apparent coefficient of the *Jovian Evection* which is much greater than that resulting from theory, and render it certain that with it there is associated another inequality of some magnitude and of very similar period. It also establishes that, had Sir G. Airy been more strict in examining the results obtained by him from the reduction of the Greenwich lunar observations for the years 1750–1851, he might have discovered the existence of the *Jovian Evection* fully thirty years ago.

Both of these conclusions suggest inquiries of some interest in the theory of the motion of the Moon.

1890 *February* 20.

On the Orbit of δ Cygni. By J. E. Gore.

The following elements of *δ Cygni* I computed some three years ago, but as they give the distance at the epoch of Sir W. Herschel's measure in 1783 somewhat too large, I did not publish them. As, however, they represent all the measures of position-angle fairly well, I now give them for what they are worth.

Provisional Elements of δ Cygni.

$P = 376{\cdot}659$ years	$\Omega = 98^\circ\ 40'$
$T = 1914{\cdot}16.$	$\lambda = 175^\circ\ 7'$
$e = 0{\cdot}327$	$a = 2''{\cdot}39$
$i = 41^\circ\ 26'$	$\mu = -0^\circ{\cdot}9557$

The following is a comparison between the recorded measures and the positions computed from the above elements. The observed position-angles have been corrected for the effect of precession to 1880·0 :—

Epoch.	Observer.	θ_o	θ_c	$\theta_o - \theta_c$	ρ_o	ρ_c	$\rho_o - \rho_c$
		°	°	°	″	″	″
1783·72	Sir W. Herschel	70·98	70·32	+0·66	...	2·72	...
1826·55	Struve	40·2	40·75	−0·55	1·91	2·04	−0·13
1828·80	„	36·5	38·7	−2·2	1·91	2·00	−0·09
1831·73	„	36·4	35·8	+0·6	1·57	1·95	−0·38

1890MNRAS..50..398G

Epoch.	Observer.	θ_o	θ_c	$\theta_o - \theta_c$	ρ_o	ρ_c	$\rho_o - \rho_c$
		°	°	°	"	"	"
1832·72	Sir J. Herschel & South	32·3	34·7	−2·4	1·5	1·93	−0·43
1833·81	Struve	35·9	33·7	+2·2	1·70	1·91	−0·21
1835·66	,,	34·3	31·7	+2·6	1·68	1·89	−0·21
1836·52	,,	31·6	30·75	+0·85	1·80	1·87	−0·07
1837·27	Mädler	31·0	29·9	+1·1	1·61	1·87	−0·21
1837·78	Smyth	30·6	29·3	+1·3	1·5	1·87	−0·37
1839·66	Dawes	27·1	27·2	−0·1	1·5	1·83	−0·33
1840·67	,,	24·8	26·1	−1·3	...	1·81	...
1841·50	Mädler	26·3	25·1	+1·2	...	1·80	...
1841·89	Dawes	23·4	24·7	−1·3	1·66	1·80	−0·14
1841·94	Kaiser	25·4	24·6	+0·8	1·72	1·79	−0·07
1842·56	Smyth	25·3	23·7	+1·6	1·8	1·78	+0·02
1842·77	Mädler	21·3	23·5	−2·2	1·46	1·78	−0·32
1843·12	Kaiser	25·5	23·1	+2·4	1·71	1·78	−0·07
1843·45	Mädler	22·4	22·7	−0·3	(1·28)	1·77	(−0·49)
1844·36	,,	23·7	21·6	+2·1	1·47	1·75	−0·28
1844·78	O. Struve	19·4	21·1	−1·7	1·68	1·75	−0·07
1845·65	Mädler	21·7	20·0	+1·7	1·32	1·74	−0·42
1846·35	,,	20·0	19·1	+0·9	1·33	1·74	−0·41
1847·18	,,	18·8	18·0	+0·8	...	1·73	...
1847·39	Dawes	16·5	17·7	−1·2	...	1·73	...
1848·75	,,	14·3	15·9	−1·6	1·76	1·72	+0·04
1851·51	,,	11·3	12·2	−0·9	1·65	1·66	−0·01
1851·68	Fletcher	10·1	12·0	−1·9	1·75	1·66	+0·09
1852·44	Mädler	13·6	10·9	+2·7	(1·19)	1·64	(−0·45)
1852·69	Smyth	14·5	10·5	+4·0	1·5	1·64	−0·14
1852·70	O. Struve	8·1	10·5	−2·4	1·51	1·64	−0·13
1852·74	Dawes	10·5	10·5	0·0	1·68	1·64	+0·04
1853·73	,,	7·1	9·1	−2·0	1·76	1·64	+0·12
1854·56	,,	4·1	7·9	−3·8	1·68	1·64	+0·04
1854·76	Morton	(0·8)	7·6	(−6·8)	(1·11)	1·64	(−0·53)
1855·74	,,	(0·2)	6·2	(−6·0)	(1·27)	1·62	(−0·35)
1856·84	Secchi	3·0	4·6	−1·6	1·41	1·61	−0·20
1858·71	O. Struve	3·1	1·8	+1·3	1·65	1·60	+0·05
1859·58	Dawes	357·6	0·5	−2·9	1·67	1·59	+0·08
1862·75	Dembowski	355·3	355·6	−0·3	...	1·57	...
1863·61	,,	355·4	354·2	+1·2	1·58	1·57	+0·01
1863·74	O. Struve	353·7	354·0	−0·3	1·60	1·57	+0·03

1890MNRAS..50..398G

Epoch.	Observer.	θ_o	θ_c	$\theta_o-\theta_c$	ρ_o	ρ_c	$\rho_o-\rho_c$
		°	°	°	″	″	″
1864·72	Dembowski	351·2	352·56	−1·36	1·68	1·56	+0·12
1864·74	Engelmann	354·3	352·53	+1·77	(2·30)	1·56	(+0·74)
1865·38	Dawes	349·5	351·4	−1·9	1·67	1·55	+0·12
1865·43	Knott	348·9	351·3	−2·4	1·70	1·55	+0·15
1865·64	Dembowski	350·4	351·0	−0·6	1·55	1·55	0·0
1866·08	Secchi	350·3	350·3	0·0	1·23	1·55	−0·32
1866·68	Knott	348·2	349·4	−1·2	1·70	1·55	+0·15
1867·06	Dembowski	348·8	348·8	0·0	1·51	1·55	−0·04
1868·61	„	347·1	345·9	+1·2	1·56	1·54	+0·02
1868·69	Brünnow	348·9	345·8	+3·1	1·52	1·54	−0·02
1869·60	Dembowski	346·3	344·7	+1·6	1·58	1·54	+0·04
1870·56	„	343·3	343·1	+0·2	1·72	1·54	+0·18
1870·85	Dunér	343·6	342·65	+0·95	1·53	1·54	−0·01
1871·50	Dembowski	342·1	341·6	+0·5	1·59	1·54	+0·05
1871·74	Knott	337·8	341·2	−3·4	1·69	1·54	+0·15
1872·60	Dembowski	339·2	339·8	−0·6	1·51	1·53	−0·02
1872·67	Knott	(330·1)	339·7	(−9·6)	1·69	1·53	+0·16
1872·78	Wilson & Seabroke	336·7	339·5	−2·8	...	1·53	...
1872·81	O. Struve	341·6	339·5	+2·1	1·47	1·53	−0·06
1873·56	Dembowski	336·2	338·2	−2·0	1·61	1·53	+0·08
1874·62	„	336·3	336·5	−0·2	1·55	1·53	+0·02
1874·70	Wilson & Seabroke	339·1	336·4	+2·7	...	1·53	...
1875·58	Dembowski	333·7	334·9	−1·2	1·58	1·53	+0·05
1875·69	Dunér	336·5	334·7	+1·8	1·52	1·53	−0·01
1875·10	Wilson & Seabroke	335·8	334·7	+1·1	...	1·53	...
1878·65	Dembowski	330·12	332·36	−2·24	1·632	1·53	+0·102
1878·65	Burnham	333·1	329·8	+3·3	1·40	1·53	−0·13
1882·66	Frisby	317·7	323·3	−5·6	1·60	1·54	+0·06
1882·72	Hall	328·3	323·2	+5·1	1·53	1·54	−0·01
1882·84	Engelmann	321·46	323·0	−1·54	1·752	1·54	+0·212
1883·82	„	321·50	321·4	+0·1	1·791	1·55	+0·241
1883·62	Perrotin	322·52	321·7	+0·82	1·667	1·55	+0·117
1883·77	Küstner	320·6	321·5	−0·9	1·75	1·55	+0·20
1885·52	Tarrant	317·83	318·7	−0·87	1·66	1·55	+0·11
1885·90	Engelmann	318·99	318·07	+0·92	1·723	1·553	+0·170
1886·435	Tarrant	318·3	317·2	+1·1	1·71 [“too large”]	1·55	+0·16
1886·65	J. J. M. Perry	315·0	316·9	−1·9	1·6	1·55	+0·05
1887·50	Tarrant	315·92	315·54	+0·38	...	1·56	...

1890MNRAS..50..398G

A Revolving Diagonal with Combined Total Reflection and Solar Prism. By William Schooling.

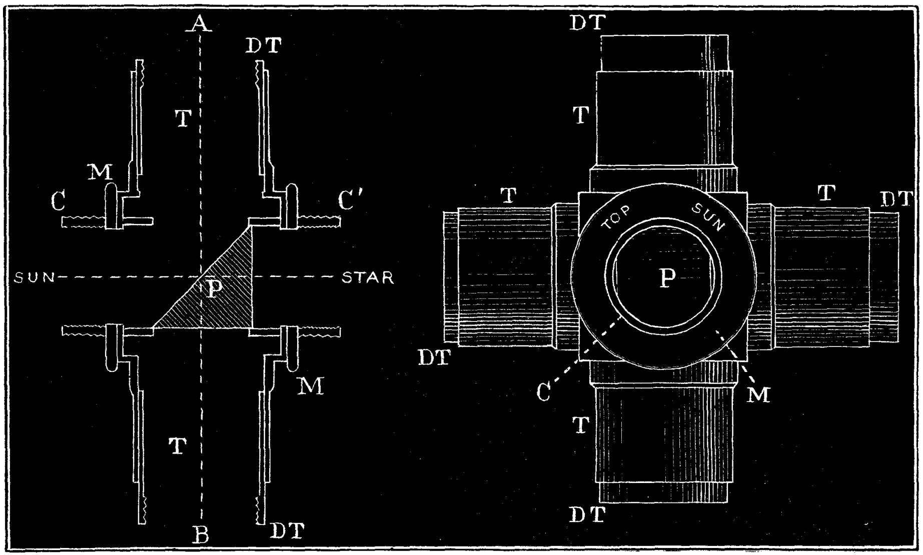
A revolving diagonal enables eye-pieces to be brought into position in rapid succession, just as a nose-piece on a microscope makes it possible to change objectives quickly and easily. It consists of a tube, screwed at each end, for fixing to the telescope, and containing a prism, which acts as a total reflection, or a first surface, prism, according to the end which is presented to the source of light, the tube having holes cut in two places to allow of the passage of the reflected light.

A hollow cube, pierced on all sides, revolves round this tube, and into four sides of the cube are screwed, at right angles to the tube containing the prism, four sockets for receiving the eye-pieces.

By revolving the cube, eye-pieces of various powers can be brought into position quickly and easily, a small stop indicating when the correct place is reached.

The eye-pieces being screwed into short tubes, or adapters, which slide into the sockets, may be focussed by pushing the adapters more or less into the sockets, and as eye-pieces of various powers are successively brought into position, each is in focus without any fresh use of the focussing screw of the telescope.

I believe the revolving arrangement to be a convenience which has not been made before.



P. is a prism fixed in a tube ending at
C. C′. in collars screwed for attaching to telescope.
M. M. are discs with milled edge fixed to the tube, enabling the tube and prism to be held while the eye-pieces are rotated.
T. T. T. T. are tubes attached to a hollow cube that rotates round the tube that holds the prism.
DT. DT. are draw tubes or
DT. DT. adapters holding the eye-pieces and sliding in the tubes T.